

CLAIMS

- 1 - Magnetic-inductive device for the control of ferromagnetic reticles, composed of a U-shaped box (1) in transversal section, which is the base and sides of the device itself, several magnets (4) made with long-lasting high-stability materials, several measuring coils (5), at least one multiple signal power point placed externally to the box (1) and one stirrup for its fixing to the device; said device is characterized by the fact of moreover comprising:
- at least two guiding plates (2) for the magnets (4); each guiding plate (2) develops orthogonally to the device along each box (1) end and is fixed to the opposite two sides of the box (1) itself;
 - two L-shaped rolled sections (3), each developing orthogonally to the device along each box (1) end and both fixed to one of the above mentioned guiding plates (2); said rolled sections (3) constitute the magnets pole pieces (4);
 - several magnets (4), the ends of which are held in the right position by holes made in the guiding plates (2); the inductor is composed of the polar pieces and the permanent magnets (4), which are placed on one or more parallel planes of the ferromagnetic insert to be tested; each magnet (4) is placed parallel to the ferromagnetic insert (8) sliding direction with respect to the device itself; vice versa, when the device is to slide on the insert (8), it is possible to confirm that each magnet (4) is placed parallel to the device sliding direction on the insert (8);
 - several coils (5) placed in a housing (6) which is U-shaped in its transversal section; said coils (5) are placed between the magnets (4) and the ferromagnetic insert (8) at the centre of the device; each coil (5) is autonomously connected to the above mentioned multiple signal power point; the signals recorded by the measuring coils (5) are transmitted to a software, producing a diagram that underlines the position and the extent of any damage found in the ferromagnetic insert (8);
 - a covering plate (7) fixed to box (1) so that it occupies the device side facing the ferromagnetic insert (8) to be examined;
 - simple gears which enable the coils (5) to rotate parallel, in following times, along

all directions in which the insert (8) metal layers are directed.

2 - Magnetic-inductive device, according to claim 1, characterized by the fact of having a transversal shape suitable to test ferromagnetic inserts (8) shaped along different planes; said permanent magnets (4) are placed on different planes, each one being parallel to a plane of the insert (8) to be examined.

3 - Magnetic-inductive device, according to claim 1, characterized by the fact that said gears, enabling the coils (5) to turn, consist of stands (9), each one housing a coil (5); each stand (9) has a pin (10) and a screwed roller (11); each screwed roller (11) is crossed by a screwed bar (12) having on at least one of its ends a knob (13) and a bushing (14), which slides along the device side; said screwed bar (12) crosses the device transversally; the above referenced pins (10) are stuck in particular holes made in the housing (6) where the coils (5) are placed; by pushing with this knob (13) the connected screwed bar (12) in one direction or in the other, all screwed rollers (11) are forced to move and they make turn the different stands (9), which have the pins (10) as fulcrum.

4 - Magnetic-inductive device, according to claim 1, characterized by the fact that said gears, enabling the coils (5) to turn, are composed of toothed turning stands (15), each one housing a coil (5); each stand (15) has got a pin stuck in a hole drilled in the housing (6) on which the coils (5) are placed; a rack (16) or a worm screw crosses transversally the device; by pushing in one direction or in the other a knob (17) connected to a rack (16) or a worm screw, all toothed turning stands (15) are forced to rotate on their own pins.